

RESTRICTED CIRCULATION

THIS PAPER IS NOT AN OFFICIAL DOCUMENT; IT IS FOR INFORMATION ONLY AND MUST NOT
BE QUOTED IN ANY PRINTED PUBLICATION

AGRICULTURAL MEMORANDUM NO 709

Estimated Actual Soil Moisture Deficits, 1941-1970, MIDLANDS

L P Smith

Following the lines of Ag.Mems. 707 and 708, and using the same notation, the following multiple regressions were found:-

	<u>L.Q.</u>	<u>Median</u>	<u>H.Q.</u>
End of June	0.89	0.86	0.84
End of July	0.88	0.86	0.93
End of August	0.82	0.89	0.91
End of September	0.81 *	0.88	0.90

* For stations with annual average rainfalls below 750 mm

The formulae were:-

	<u>Lower Quartile</u>	<u>Median</u>	<u>Higher Quartile</u>
End of June	$0.29P_3 - 0.03R_3 + 3.92$	$0.4P_3 - 0.01R_3 + 0.59$	$0.53P_3 - 0.013R_3 + 0.68$
End of July	$0.435P_4 - 0.023R_4 + 1.91$	$0.46P_4 - 0.0135R_4 + 0.52$	$0.51P_4 - 0.01R_4 - 0.12$
End of August	$0.79P_5 - 0.021R_5 - 4.53$	$0.36P_5 - 0.022R_5 + 3.76$	$0.23P_5 - 0.012R_5 + 4.16$
End of Sept	$0.58P_6 - 0.019R_6 - 2.8$	$0.53P_6 - 0.021R_6 + 0.51$	$0.17P_6 - 0.015R_6 + 6.07$
(for annual averages below 750 mm)			

The basic data were as follows:-

	JUNE			JULY			AUGUST			SEPT		
	LQ	M	HQ	LQ	M	HQ	LQ	M	HQ	LQ	M	HQ
<u>EAST MIDLANDS</u>												
Gt. Missenden	1.2	2.5	3.5	2.3	3.3	4.1	1.6	3.3	4.3	0.0	2.2	4.0
Belper	1.6	2.3	2.9	2.1	2.7	3.5	1.1	2.3	4.0	0.0	1.4	3.7
Mansfield	2.1	2.7	3.2	2.4	3.5	4.2	2.5	3.3	4.2	0.2	3.0	4.3
Towcester	1.9	2.3	3.3	2.1	3.3	3.8	1.4	3.0	4.2	0.1	1.9	4.1
Leicester	1.7	2.3	3.2	1.9	3.0	3.7	0.7	2.6	3.9	0.0	2.3	3.9
Oxford	2.1	2.7	3.5	2.5	3.3	4.1	2.2	3.0	4.5	0.5	2.9	4.4
Kettering	2.1	2.8	3.4	3.2	3.7	4.1	2.6	4.0	4.5	1.3	3.2	4.6
Newport Pagnell	2.2	2.7	3.5	2.4	3.7	4.1	2.4	4.0	4.5	1.1	3.3	4.6
Ketton	1.6	2.6	3.5	2.7	3.6	4.2	1.9	3.8	4.5	1.3	3.0	4.6
Cranwell	2.1	2.7	3.6	3.1	3.6	4.2	3.0	3.8	4.5	2.0	3.7	4.3
Sutton Bonington	2.2	2.7	3.5	2.8	3.5	4.0	2.2	3.6	4.2	0.6	2.6	4.2

	JUNE			JULY			AUGUST			SEPT		
	LQ	M	HQ	LQ	M	HQ	LQ	M	HQ	LQ	M	LQ
<u>WEST MIDLANDS</u>												
Hanley	0.7	2.3	3.2	1.2	2.6	3.4	0.1	1.6	3.2	0.0	1.0	2.7
Delamere	0.6	2.2	2.6	0.9	2.3	3.1	0.6	1.8	3.1	0.0	0.4	2.5
Birmingham	1.1	2.2	2.8	1.7	3.1	3.6	0.5	2.5	3.7	0.0	1.5	3.4
Walsall	1.3	2.2	3.1	2.1	3.2	3.6	0.9	2.7	4.0	0.0	1.6	3.6
Chipping Norton	1.8	2.3	3.5	2.3	3.5	4.0	1.9	2.7	4.1	0.3	2.7	3.9
Ross-on-Wye	2.0	2.7	3.4	3.1	3.5	4.3	2.9	3.5	4.4	1.6	2.6	4.2
Cheltenham	1.9	2.5	3.4	2.7	3.4	4.1	1.8	3.1	4.3	0.5	2.0	3.6
Shrewsbury	0.9	2.4	3.3	1.9	3.2	3.9	0.6	2.8	4.1	0.0	1.6	3.8
Worcester	2.4	2.5	3.5	2.9	4.0	4.1	2.4	3.4	4.4	1.2	2.8	4.4
Leamington Spa	1.9	2.6	3.7	2.8	3.6	4.2	1.9	3.9	4.5	1.3	3.6	4.4

Any comments or suggestions on this paper should be referred to the author.

Meteorological Office
Bracknell

February 1975